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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,657

04/06/2006

Shoichi Miyawaki

48914

1367

1609

7590

04/03/2007

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EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/533,657

Applicant(s)

MIYAWAKI ET AL.

Examiner

Dennis Cordray

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-25 is/are rejected.
- 7) ☒ Claim(s) 23 and 25 is/are objected to.
- 8) ☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/22/2006 have been fully considered but they are not persuasive.

Applicant argues on p 6 that JP 6-128890 does not disclose irradiation of a pulp containing bleached mechanical pulp. Applicant further argues that the purpose of JP 6-128890 is to increase brightness of a pulp and not to produce an anti-fading effect. Applicant also argues that there is no indication that any pulp listed in paragraph 0007 is a bleached mechanical pulp when entering step 1. Applicant argues that the statement "all pulp" does not mean "all bleached pulp." Applicant argues that the Examples show that the brightness of the irradiated examples 1-3 is slightly lower than that of comparative example 2 with no laser treatment and thus the laser treatment would not be obvious.

The disclosure in JP 6-128890 of "all pulp" implicitly includes bleached pulp as well as unbleached pulp. Since mechanical pulp, chemical pulp and recycled pulp are also listed, the Examiner interprets the disclosure as implicitly including bleached mechanical pulp, bleached chemical pulp, bleached recycled pulp and bleached deinked pulp. The use of multiple chemical bleaching steps, using the same or diverse treatments, are well known in prior art to obtain the desired brightness in pulps, as admitted by applicant in the paragraph spanning pp 3-4 of the Specification. The examples given in JP 6-128890 appear to indicate that the irradiation treatment of a pulp in the presence of a peroxide results in a significant increase in brightness. Why

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would it not have been obvious to one of ordinary skill in the art to use the process of JP 6-128890 multiple times or on a pulp bleached by another process or as an additional bleaching step before, after or in the middle of a bleaching sequence and have a reasonable expectation of obtaining a further increase in pulp brightness?

With regard to the different purpose for the treatment disclosed in JP 6-128890, the instant claims are directed to a process. The intended use of that process, as recited in the preamble to claim 5, does not contribute to the steps recited in the process and thus carries no patentable weight. The method steps disclosed in JP 6-128890 are the same as those claimed for the instant invention, and the result of applying the method to a bleached pulp must be the same, imparting improved discoloration and anti-fading effects to the pulp in addition to the bleaching effect. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

With regard to the examples in the instant Specification, the examples are directed to a paper, not a pulp. No details of the manufacture of the paper are given except that it is a hand-made paper. No indication of the variability of the brightness testing are provided. Is a slightly lower brightness within the experimental variability of the measurement? The presumption in combining prior art references is that the instant disclosure was not available at the time of the invention, thus could not have suggested anything to one of ordinary skill in the art.

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"It should be too well settled now to require citation or discussion that the test for combining references is not what the individual references themselves suggest but rather what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

The combination of references used in the rejections below is based on the teachings in each reference that the methods result in brighter pulp, and therefore are functionally equivalent. Why would one of ordinary skill in the art at the time of the invention, having the teachings of JP 6-128890 and JP 2002-088673, not find it obvious to substitute one method for the other or even combine the two methods and have a reasonable expectation of success? "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Why would the same argument not apply equally well to two equivalent methods?

Applicant argues on p 8 that the JP 2002-088673 does not disclose the features of the claim relied upon to distinguish over prior art, presumably either the irradiation of

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bleached mechanical pulp or the anti-fading objective of the instant invention, thus cannot be used to modify the prior art to include the feature.

JP 6-128890 implicitly discloses treatment of bleached mechanical pulp or, at least, it would have been obvious to one of ordinary skill in the art to use a bleached pulp. The art of JP 6-128890 and JP 2002-088673 is analogous as pertaining to bleaching pulps by irradiating them in the presence of a peroxide, thus the two references are combinable. The two methods are functionally equivalent means of bleaching pulp and it would have been obvious to one of ordinary skill in the art to use either method or to combine features of both. Motivation is supplied by the desire to achieve increased whiteness in pulps. The claimed "improved discoloration" and "anti-fading" features neither provide additional method steps nor limit the recited method steps, but merely recite a result obtained by using the method. The methods of JP 6-128890 and JP 2002-088673 comprise the same treatment steps as those claimed in the instant invention and the result of applying that method to a bleached pulp must be the same, imparting improved discoloration and anti-fading effects to the pulp in addition to the bleaching effect.

The rejections are maintained and new rejections are added due to the amended claims.

Claim Objections

Claims 23 and 25 are objected to because of the following informalities: each claim recites the species "benzyl alcohol" twice. One occurrence should be deleted in each claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite a "permanent anti-fading effect." No evidence is presented in the Specification that supports using the word permanent. The testing performed on the samples, which were papers rather than pulps, only included "aging" the samples by UV treatment at specified conditions for a maximum of two hours. No comparison of the results with "real life" aging has been demonstrated and extrapolating the results of the aging test to infinite time cannot possibly be justified. The claim is therefore indefinite for failing to provide a reasonable statement of the metes and bounds of the claimed subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 9-10 and 15-17 are rejected under 35 U.S.C.102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada Nobuo (JP 6-128890, Abstract supplied by applicant and English translation used).

Claim 5: Yamada Nobuo discloses a method for improving the whiteness of a pulp, which can comprise a bleached mechanical pulp, by irradiating the pulp with UV light in the presence of a peroxide (Abstract; par 0007).

Claim 6: Yamada Nobuo discloses that the method is aimed at all pulp, including mechanical, chemical and recycled pulp. All pulp inherently includes or, at least, it would have been obvious to one of ordinary skill in the art that it includes one or more of bleached mechanical pulp, bleached chemical pulp and bleached deinked pulp.

Claims 9 and 10: Yamada Nobuo discloses that hydrogen peroxide is used in the range of 1-3%, which is within the claimed range of 0.05 to 50%.

Claims 15-17: Yamada Nobuo does not disclose a permanent anti-fading effect. However, the treatment process is the same as the inventive process, as claimed, thus the effect on the pulp must be the same. Pulps treated by the process of Yamada Nobuo will inherently have or, at least, it would have been obvious to one of ordinary skill in the art to obtain the claimed anti-fading effect.

Claims 12-14 are rejected under 35 U.S.C.102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada Nobuo.

Claims 12-14 are product-by-process claims (See MPEP § 2113). The product of Yamada Nobuo appears to be the same as or similar to the claimed product, bleached pulp with improved discoloration having been irradiated with UV light in the presence of a peroxide, which is disclosed by Yamada Nobuo. The burden therefore shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). "In the event any differences can be shown for the product of the product-by-process claims 12-14 as opposed to the product taught by the reference Yamada Nobuo, such differences would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results: see also In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)"

Claims 7, 8, 11 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Nobuo, as applied in the rejection of claims 5 and 6 above, in view of Oouchi Akihiko (JP 2002-088673 A).

Claims 7, 8, 11: Yamada Nobuo does not disclose expressly that the light is laser light.

Oouchi Akihiko discloses a method for treating pulp with ultraviolet and/or visible light in the presence of hydrogen peroxide, and discloses that the light is laser light (Abs; pars 11 and 16; claim 1).

The art of Yamada Nobuo, Oouchi Akihiko and the instant invention is analogous as pertaining to bleaching pulps by irradiation in the presence of hydrogen peroxide. At

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the time of the invention, it would have been obvious to a person of ordinary skill in the art to use laser light as described by Oouchi Akihiko as the source of visible light in the irradiation method of Yamada Nobuo as a functionally equivalent process and have a reasonable expectation of success.

Claims 22-25: Yamada Nobuo does not disclose a hydrogen donating organic compound, ethyl alcohol, benzyl alcohol or furfuryl alcohol.

Oouchi Akihiko discloses that it is desirable to use the hydrogen peroxide in a solvent comprising alcohol or water and an alcohol (par 10).

The art of Yamada Nobuo, Oouchi Akihiko and the instant invention is analogous as pertaining to bleaching pulps by irradiation in the presence of hydrogen peroxide. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an alcohol solvent as described by Oouchi Akihiko in method of Yamada Nobuo to dissolve and distribute the hydrogen peroxide. Ethanol is a well known and readily available solvent that is completely miscible with water and would have been an obvious choice.

Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada Nobuo, as applied in the rejection of claims 5 and 6 above, in view of Oouchi Akihiko and further in view of Oouchi Akihiko (JP 2002-088671 A).

Yamada Nobuo and Oouchi Akihiko ('673) do not disclose a reducing agent, sodium borohydride or tetrabutylammonium borohydride.

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Oouchi Akihiko discloses a method for treating pulp with ultraviolet and/or visible light in the presence of a reducing agent, sodium borohydride, and discloses that the visible light is laser light (Abs; pars 10-12; claims 1-3).

The art of Yamada Nobuo, Oouchi Akihiko ('671 and '673) and the instant invention is analogous as pertaining to bleaching pulps by irradiation in the presence of a peroxide or a reducing agent. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use sodium borohydride as described by Oouchi Akihiko ('671) as the reducing in the irradiation method of Yamada Nobuo in view of Oouchi Akihiko ('673) as a functionally equivalent process and have a reasonable expectation of success.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is (571) 272-8244. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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